

**SEQUENCE LISTING**

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<120> METHOD AND KIT FOR DETECTING A RISK OF DIABETES OR A METABOLIC SYNDROME

<130> 0933-0247PUS1

<140> US 10/538,198  
<141> 2005-06-09

<150> PCT/FI03/00946  
<151> 2003-12-11

<150> FI 20022178  
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<170> PatentIn version 3.1

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<223> ADRA2B variant type sequence

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gcg gcc atc acc ttc ctc att ctc ttt acc atc ttc ggc aac gct ctg	96
Ala Ala Ile Thr Phe Leu Ile Leu Phe Thr Ile Phe Gly Asn Ala Leu	
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gtc atc ctg gct gtg ttg acc agc cgc tcg ctg cgc gcc cct cag aac	144
Val Ile Leu Ala Val Leu Thr Ser Arg Ser Leu Arg Ala Pro Gln Asn	
35 40 45	
ctg ttc ctg gtg tcg ctg gcc gcc gac atc ctg gtg gcc acg ctc	192
Leu Phe Leu Val Ser Leu Ala Ala Asp Ile Leu Val Ala Thr Leu	
50 55 60	
atc atc cct ttc tcg ctg gcc aac gag ctg ctg ggc tac tgg tac ttc	240
Ile Ile Pro Phe Ser Leu Ala Asn Glu Leu Leu Gly Tyr Trp Tyr Phe	
65 70 75 80	
cgg cgc acg tgg tgc gag gtg tac ctg gcg ctc gac gtg ctc ttc tgc	288
Arg Arg Thr Trp Cys Glu Val Tyr Leu Ala Leu Asp Val Leu Phe Cys	

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acc tcg tcc atc gtg cac. ctg tgc gcc atc agc ctg gac cgc tac tgg Thr Ser Ser Ile Val His Leu Cys Ala Ile Ser Leu Asp Arg Tyr Trp 100	105	110	336
gcc gtg agc cgc gcg ctg gag tac aac tcc aag cgc acc ccg cgc cgc Ala Val Ser Arg Ala Leu Glu Tyr Asn Ser Lys Arg Thr Pro Arg Arg 115	120	125	384
atc aag tgc atc atc ctc act gtg tgg ctc atc gcc gcc gtc atc tcg Ile Lys Cys Ile Ile Leu Thr Val Trp Leu Ile Ala Ala Val Ile Ser 130	135	140	432
ctg ccg ccc ctc atc tac aag ggc gac cag ggc ccc cag ccg cgc ggg Leu Pro Pro Leu Ile Tyr Lys Gly Asp Gln Gly Pro Gln Pro Arg Gly 145	150	155	480
cgc ccc cag tgc aag ctc aac cag gag gcc tgg tac atc ctg gcc tcc Arg Pro Gln Cys Lys Leu Asn Gln Glu Ala Trp Tyr Ile Leu Ala Ser 165	170	175	528
agc atc gga tct ttc ttt gct cct tgc ctc atc atg atc ctt gtc tac Ser Ile Gly Ser Phe Phe Ala Pro Cys Leu Ile Met Ile Leu Val Tyr 180	185	190	576
ctg cgc atc tac ctg atc gcc aaa cgc agc aac cgc aga ggt ccc agg Leu Arg Ile Tyr Leu Ile Ala Lys Arg Ser Asn Arg Arg Gly Pro Arg 195	200	205	624
gcc aag ggg ggg cct ggg cag ggt gag tcc aag cag ccc cga ccc gac Ala Lys Gly Gly Pro Gly Gln Gly Glu Ser Lys Gln Pro Arg Pro Asp 210	215	220	672
cat ggt ggg gct ttg gcc tca gcc aaa ctg cca gcc ctg gcc tct gtg His Gly Gly Ala Leu Ala Ser Ala Lys Leu Pro Ala Leu Ala Ser Val 225	230	235	720
gct tct gcc aga gag gtc aac gga cac tcg aag tcc act ggg gag aag Ala Ser Ala Arg Glu Val Asn Gly His Ser Lys Ser Thr Gly Glu Lys 245	250	255	768
gag gag ggg gag acc cct gaa gat act ggg acc cgg gcc ttg cca ccc Glu Glu Gly Glu Thr Pro Glu Asp Thr Gly Thr Arg Ala Leu Pro Pro 260	265	270	816
agt tgg gct gcc ctt ccc aac tca ggc cag ggc cag aag gag ggt gtt Ser Trp Ala Ala Leu Pro Asn Ser Gly Gln Gly Gln Lys Glu Gly Val 275	280	285	864
tgt ggg gca tct cca gag gat gaa gct gaa gag gag gaa gag gag gag Cys Gly Ala Ser Pro Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu 290	295	300	912
gag gag tgt gaa ccc cag gca gtg cca gtg tct ccg gcc tca gct tgc Glu Glu Cys Glu Pro Gln Ala Val Pro Val Ser Pro Ala Ser Ala Cys 305	310	315	960

agc ccc ccg ctg cag cag cca cag ggc tcc cgg gtg ctg gcc acc cta Ser Pro Pro Leu Gln Gln Pro Gln Gly Ser Arg Val Leu Ala Thr Leu	325                    330                    335	1008
cgt ggc cag gtg ctc ctg ggc agg ggc gtg ggt gct ata ggt ggg cag Arg Gly Gln Val Leu Leu Gly Arg Gly Val Gly Ala Ile Gly Gly Gln	340                    345                    350	1056
tgg tgg cgt cga agg gcg cac gtg acc cgg gag aag cgc ttc acc ttc Trp Trp Arg Arg Arg Ala His Val Thr Arg Glu Lys Arg Phe Thr Phe	355                    360                    365	1104
gtg ctg gct gtg gtc att ggc gtt ttt gtg ctc tgc tgg ttc ccc ttc Val Leu Ala Val Val Ile Gly Val Phe Val Leu Cys Trp Phe Pro Phe	370                    375                    380	1152
ttc ttc agc tac agc ctg ggc gcc atc tgc ccg aag cac tgc aag gtg Phe Phe Ser Tyr Ser Leu Gly Ala Ile Cys Pro Lys His Cys Lys Val	385                    390                    395                    400	1200
ccc cat ggc ctc ttc cag ttc ttc tgg atc ggc tac tgc aac agc Pro His Gly Leu Phe Gln Phe Phe Trp Ile Gly Tyr Cys Asn Ser	405                    410                    415                    .	1248
tca ctg aac cct gtt atc tac acc atc ttc aac cag gac ttc cgc cgt Ser Leu Asn Pro Val Ile Tyr Thr Ile Phe Asn Gln Asp Phe Arg Arg	420                    425                    430	1296
gcc ttc cgg agg atc ctg tgc cgc ccg tgg acc cag acg gcc tgg tga Ala Phe Arg Arg Ile Leu Cys Arg Pro Trp Thr Gln Thr Ala Trp	435                    440                    445	1344

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Val Ile Leu Ala Val Leu Thr Ser Arg Ser Leu Arg Ala Pro Gln Asn  
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Leu Phe Leu Val Ser Leu Ala Ala Ala Asp Ile Leu Val Ala Thr Leu  
50 55 60

Ile Ile Pro Phe Ser Leu Ala Asn Glu Leu Leu Gly Tyr Trp Tyr Phe  
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Arg Arg Thr Trp Cys Glu Val Tyr Leu Ala Leu Asp Val Leu Phe Cys  
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Thr Ser Ser Ile Val His Leu Cys Ala Ile Ser Leu Asp Arg Tyr Trp  
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Ala Val Ser Arg Ala Leu Glu Tyr Asn Ser Lys Arg Thr Pro Arg Arg  
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Ile Lys Cys Ile Ile Leu Thr Val Trp Leu Ile Ala Ala Val Ile Ser  
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145 150 155 160

Arg Pro Gln Cys Lys Leu Asn Gln Glu Ala Trp Tyr Ile Leu Ala Ser  
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Ser Ile Gly Ser Phe Phe Ala Pro Cys Leu Ile Met Ile Leu Val Tyr  
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Leu Arg Ile Tyr Leu Ile Ala Lys Arg Ser Asn Arg Arg Gly Pro Arg  
195 200 205

Ala Lys Gly Gly Pro Gly Gln Gly Glu Ser Lys Gln Pro Arg Pro Asp  
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His Gly Gly Ala Leu Ala Ser Ala Lys Leu Pro Ala Leu Ala Ser Val  
225 230 235 240

Ala Ser Ala Arg Glu Val Asn Gly His Ser Lys Ser Thr Gly Glu Lys  
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Glu Glu Gly Glu Thr Pro Glu Asp Thr Gly Thr Arg Ala Leu Pro Pro  
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Ser Trp Ala Ala Leu Pro Asn Ser Gly Gln Gly Gln Lys Glu Gly Val  
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Cys Gly Ala Ser Pro Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu

290	295	300
Glu Glu Cys Glu Pro Gln Ala Val Pro Val Ser Pro Ala Ser Ala Cys		
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Ser Pro Pro Leu Gln Gln Pro Gln Gly Ser Arg Val Leu Ala Thr Leu		
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Arg Gly Gln Val Leu Leu Gly Arg Gly Val Gly Ala Ile Gly Gly Gln		
340	345	350
Trp Trp Arg Arg Arg Ala His Val Thr Arg Glu Lys Arg Phe Thr Phe		
355	360	365
Val Leu Ala Val Val Ile Gly Val Phe Val Leu Cys Trp Phe Pro Phe		
370	375	380
Phe Phe Ser Tyr Ser Leu Gly Ala Ile Cys Pro Lys His Cys Lys Val		
385	390	395
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Pro His Gly Leu Phe Gln Phe Phe Trp Ile Gly Tyr Cys Asn Ser		
405	410	415
Ser Leu Asn Pro Val Ile Tyr Thr Ile Phe Asn Gln Asp Phe Arg Arg		
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gcg gcc atc acc ttc ctc att ctc ttt acc atc ttc ggc aac gct ctg		
Ala Ala Ile Thr Phe Leu Ile Leu Phe Thr Ile Phe Gly Asn Ala Leu		
20	25	30
96		

gtc atc ctc gct gtg ttg acc agc cgc tcg ctg cgc gcc cct cag aac 144  
 Val Ile Leu Ala Val Leu Thr Ser Arg Ser Leu Arg Ala Pro Gln Asn  
   35                   40                   45  
  
 ctg ttc ctg gtg tcg ctg gcc gcc gac atc ctg gtg gcc acg ctc 192  
 Leu Phe Leu Val Ser Leu Ala Ala Asp Ile Leu Val Ala Thr Leu  
   50                   55                   60  
  
 atc atc cct ttc tcg ctg gcc aac gag ctg ctg ggc tac tgg tac ttc 240  
 Ile Ile Pro Phe Ser Leu Ala Asn Glu Leu Leu Gly Tyr Trp Tyr Phe  
   65                   70                   75                   80  
  
 cg<sup>g</sup> cgc acg tgg tgc gag gtg tac ctg gcg ctc gac gtg ctc ttc tgc 288  
 Arg Arg Thr Trp Cys Glu Val Tyr Leu Ala Leu Asp Val Leu Phe Cys  
   85                   90                   95  
  
 acc tcg tcc atc gtg cac ctg tgc gcc atc agc ctg gac cgc tac tgg 336  
 Thr Ser Ser Ile Val His Leu Cys Ala Ile Ser Leu Asp Arg Tyr Trp  
   100                 105                 110  
  
 gcc gtg agc cgc gc<sup>g</sup> ctg gag tac aac tcc aag cgc acc cc<sup>g</sup> cgc cgc 384  
 Ala Val Ser Arg Ala Leu Glu Tyr Asn Ser Lys Arg Thr Pro Arg Arg  
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 atc aag tgc atc atc ctc act gtg tgg ctc atc gcc gcc gtc atc tcg 432  
 Ile Lys Cys Ile Ile Leu Thr Val Trp Leu Ile Ala Ala Val Ile Ser  
   130                 135                 140  
  
 ctg ccg ccc ctc atc tac aag ggc gac cag ggc ccc cag cc<sup>g</sup> cgc ggg 480  
 Leu Pro Pro Leu Ile Tyr Lys Gly Asp Gln Gly Pro Gln Pro Arg Gly  
   145                 150                 155                 160  
  
 cgc ccc cag tgc aag ctc aac cag gag gcc tgg tac atc ctg gcc tcc 528  
 Arg Pro Gln Cys Lys Leu Asn Gln Glu Ala Trp Tyr Ile Leu Ala Ser  
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 agc atc gga tct ttc ttt gct cct tgc ctc atc atg atc ctt gtc tac 576  
 Ser Ile Gly Ser Phe Phe Ala Pro Cys Leu Ile Met Ile Leu Val Tyr  
   180                 185                 190  
  
 ctg cgc atc tac ctg atc gcc aaa cgc agc aac cgc aga ggt ccc agg 624  
 Leu Arg Ile Tyr Leu Ile Ala Lys Arg Ser Asn Arg Arg Gly Pro Arg  
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 Ala Lys Gly Gly Pro Gly Gln Gly Glu Ser Lys Gln Pro Arg Pro Asp  
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 His Gly Gly Ala Leu Ala Ser Ala Lys Leu Pro Ala Leu Ala Ser Val  
   225                 230                 235                 240  
  
 gct tct gcc aga gag gtc aac gga cac tcg aag tcc act ggg gag aag 768  
 Ala Ser Ala Arg Glu Val Asn Gly His Ser Lys Ser Thr Gly Glu Lys  
   245                 250                 255

gag gag ggg gag acc cct gaa gat act ggg acc cgg gcc ttg cca ccc Glu Glu Gly Glu Thr Pro Glu Asp Thr Gly Thr Arg Ala Leu Pro Pro	816
260 265 270	
agt tgg gct gcc ctt ccc aac tca ggc cag ggc cag aag gag ggt gtt Ser Trp Ala Ala Leu Pro Asn Ser Gly Gln Gly Gln Lys Glu Gly Val	864
275 280 285	
tgt ggg gca tct cca gag gat gaa gct gaa gag gag gaa gag gag gag Cys Gly Ala Ser Pro Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu	912
290 295 300	
gag gag gag gaa gag tgt gaa ccc cag gca gtg cca gtg tct ccg gcc Glu Glu Glu Glu Cys Glu Pro Gln Ala Val Pro Val Ser Pro Ala	960
305 310 315 320	
tca gct tgc agc ccc ccg ctg cag cag cca cag ggc tcc ccg gtg ctg Ser Ala Cys Ser Pro Pro Leu Gln Gln Pro Gln Gly Ser Arg Val Leu	1008
325 330 335	
gcc acc cta cgt ggc cag gtg ctc ctg ggc agg ggc gtg ggt gct ata Ala Thr Leu Arg Gly Gln Val Leu Leu Gly Arg Gly Val Gly Ala Ile	1056
340 345 350	
ggt ggg cag tgg tgg cgt cga agg gcg cac gtg acc ccg gag aag cgc Gly Gly Gln Trp Trp Arg Arg Ala His Val Thr Arg Glu Lys Arg	1104
355 360 365	
ttc acc ttc gtg ctg gct gtg gtc att ggc gtt ttt gtg ctc tgc tgg Phe Thr Phe Val Leu Ala Val Val Ile Gly Val Phe Val Leu Cys Trp	1152
370 375 380	
ttc ccc ttc ttc ttc agc tac agc ctg ggc gcc atc tgc ccg aag cac Phe Pro Phe Phe Ser Tyr Ser Leu Gly Ala Ile Cys Pro Lys His	1200
385 390 395 400	
tgc aag gtg ccc cat ggc ctc ttc cag ttc ttc ttc tgg atc ggc tac Cys Lys Val Pro His Gly Leu Phe Gln Phe Phe Phe Trp Ile Gly Tyr	1248
405 410 415	
tgc aac agc tca ctg aac cct gtt atc tac acc atc ttc aac cag gac Cys Asn Ser Ser Leu Asn Pro Val Ile Tyr Thr Ile Phe Asn Gln Asp	1296
420 425 430	
ttc cgc cgt gcc ttc cg agg atc ctg tgc cgc ccg tgg acc cag acg Phe Arg Arg Ala Phe Arg Arg Ile Leu Cys Arg Pro Trp Thr Gln Thr	1344
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Val Ile Leu Ala Val Leu Thr Ser Arg Ser Leu Arg Ala Pro Gln Asn  
35 40 45

Leu Phe Leu Val Ser Leu Ala Ala Asp Ile Leu Val Ala Thr Leu  
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Ile Ile Pro Phe Ser Leu Ala Asn Glu Leu Leu Gly Tyr Trp Tyr Phe  
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Arg Arg Thr Trp Cys Glu Val Tyr Leu Ala Leu Asp Val Leu Phe Cys  
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Thr Ser Ser Ile Val His Leu Cys Ala Ile Ser Leu Asp Arg Tyr Trp  
100 105 110

Ala Val Ser Arg Ala Leu Glu Tyr Asn Ser Lys Arg Thr Pro Arg Arg  
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Ile Lys Cys Ile Ile Leu Thr Val Trp Leu Ile Ala Ala Val Ile Ser  
130 135 140

Leu Pro Pro Leu Ile Tyr Lys Gly Asp Gln Gly Pro Gln Pro Arg Gly  
145 150 155 160

Arg Pro Gln Cys Lys Leu Asn Gln Glu Ala Trp Tyr Ile Leu Ala Ser  
165 170 175

Ser Ile Gly Ser Phe Phe Ala Pro Cys Leu Ile Met Ile Leu Val Tyr  
180 185 190

Leu Arg Ile Tyr Leu Ile Ala Lys Arg Ser Asn Arg Arg Gly Pro Arg  
195 200 205

Ala Lys Gly Gly Pro Gly Gln Gly Glu Ser Lys Gln Pro Arg Pro Asp  
210 215 220

His Gly Gly Ala Leu Ala Ser Ala Lys Leu Pro Ala Leu Ala Ser Val  
225 230 235 240

Ala Ser Ala Arg Glu Val Asn Gly His Ser Lys Ser Thr Gly Glu Lys  
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Glu Glu Gly Glu Thr Pro Glu Asp Thr Gly Thr Arg Ala Leu Pro Pro  
260 265 270

Ser Trp Ala Ala Leu Pro Asn Ser Gly Gln Gly Gln Lys Glu Gly Val  
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Cys Gly Ala Ser Pro Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu  
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Glu Glu Glu Glu Glu Cys Glu Pro Gln Ala Val Pro Val Ser Pro Ala  
305 310 315 320

Ser Ala Cys Ser Pro Pro Leu Gln Gln Pro Gln Gly Ser Arg Val Leu  
325 330 335

Ala Thr Leu Arg Gly Gln Val Leu Leu Gly Arg Gly Val Gly Ala Ile  
340 345 350

Gly Gly Gln Trp Trp Arg Arg Arg Ala His Val Thr Arg Glu Lys Arg  
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Phe Thr Phe Val Leu Ala Val Val Ile Gly Val Phe Val Leu Cys Trp  
370 375 380

Phe Pro Phe Phe Ser Tyr Ser Leu Gly Ala Ile Cys Pro Lys His  
385 390 395 400

Cys Lys Val Pro His Gly Leu Phe Gln Phe Phe Phe Trp Ile Gly Tyr  
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Cys Asn Ser Ser Leu Asn Pro Val Ile Tyr Thr Ile Phe Asn Gln Asp  
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